



CANADIAN GLOBAL AFFAIRS INSTITUTE
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Critical Infrastructure and Energy Systems in the United States

by Charlotte Duval-Lantoiné
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CONFERENCE REPORT

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CGAI Operations Manager and Fellow
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Adam Sieminski – President, King Abdullah Petroleum Studies and Research Center (KAPSARC)

Jude Clemente – Principal at JTC Energy Research Consultants LLC and Fellow at CGAI

QUESTION: *As extreme weather events such as wildfires in California or freak winter storms in Texas increase in frequency what can be done to make sure critical energy infrastructure in the U.S. is more secure?*

Jude Clemente

- More diverse system; Texas energy market, not capacity market
- Texas systems need to be weatherized, as those events become more frequent
- Part of making energy systems more resilient requires diversifying and weatherizing the infrastructure available
 - The problem with weatherizing is that it is costly and complex to do, and helps prepare for events whose frequency and magnitudes are unknown
- Building more pipelines and increase available storage for gas are also part of the solution
- Renewable energy and their associated infrastructure currently are not reliable enough to be part of the resiliency piece. Because the ability to extract wind or solar power is intermittent, a continuous supply is not a possibility.

Adam Sieminski

- There are five types of risks to critical energy infrastructures: resilience, aging, cyber security, workforce development, “unknown unknowns”

QUESTION: *As much as competing pundits tried to blame the problems on wind turbines versus natural gas infrastructure, is there a heavy reliance on any single form of energy, and thus one form of energy infrastructure the problem? Secondly, how could integration of the mix of energy production: wind turbines, natural gas plants, nuclear reactors etc. reduce the likelihood of a failure in the U.S. energy system? Is that even possible?*



Jude Clemente

- The energy shutdown in Texas of March 2021 was an energy system issue in itself, rather than a lack of supply (about 45%-50% of Texas' energy is reliant on gas, and this has remained consistent despite a significant increase in production over the past decade)

Adam Sieminski

- Texas has made the choice to limit cross state transmission of energy, in order to keep the federal government out of its energy issues. As a result, neighbouring states were unable to provide support during the shutdown.
- States in electricity regions have created fora to discuss and collaborate on energy issues.
- There is significant energy transmission between the States and with Canada or Mexico. North America would be significantly better off if there was a way to integrate the energy system of the U.S., Canada, and Mexico.

Jude Clemente

- It is critical to create forums to facilitate energy exchanges between states and to help foster a North American approach to energy cooperation and energy exchanges
- Currently, the Biden administration is not clear about the approach it is taking towards energy, which creates uncertainty in the market and in countries that rely on the United States for energy (e.g., Mexico, developing countries in East Asia).
 - This comes from a reluctance to include fossil fuels in climate policies.

QUESTION: *KAPSARC's projects and research span the globe, are there practices or policies in other countries or regions that the U.S. could use to better secure their energy infrastructure?*

Adam Sieminski

- Fossil fuels belong to the climate policy discussions, as renewable have yet to become completely reliable.
- A solution would be to implement a circular carbon economy (adopted by the G20 in 2020), whose goal is to reduce, reuse, recycle, and remove carbon and greenhouse gas emissions.
- Including fossil fuels in climate discussions is also an issue of infrastructure: addressing climate change by simply stopping the use of fossil fuel would negatively impact the resiliency of energy systems



- It would reduce the accessibility and reliability of energy and increase costs, at a time when energy access and affordability remain a concern on a global scale
 - Many industries rely solely on fossil fuels, necessitating a more phased transition and more innovative solutions to reduce carbon emissions.
 - The U.S. Tax Code allows for experimentation with carbon capture; industries can use that instrument to innovate
- Renewables are only part of the toolkit to address climate change.

QUESTION: *Is there a place and a time for public-private partnerships to build renewable energy infrastructure and transmission lines?*

Jude Clemente

- In order to help strengthen the resiliency of energy systems, a couple of matters need to be considered
 - Not every region will have the same type of resources available: some states have enough wind and sun to develop wind and solar infrastructure, others not as much
 - Energy transmission lines need to be built to allow for the transfer of energy – and there is bipartisan support to do so
- The process of electrification and its implications are under-discussed
 - Electric cars will increase the demand for power in unprecedented way
 - Affordability and access need to remain front and centre of the discussion

Adam Sieminski

- The “build back better” approach of recovery post-COVID offers opportunities working on reducing risk and increasing resiliency
- There have been significant efforts from the U.S. Department of Energy in terms of protecting the grid, especially on the cybersecurity front
- The energy shutdown in Texas has shown that energy sources and distribution have been taken for granted

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necessarily reflect those of the United States Department of State.*

About the Author

Charlotte Duval-Lantoin is the Ottawa Operations Manager and a Fellow at CGAI.

Canadian Global Affairs Institute

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